

Appendix A

Institutional Controls at the Idaho National Laboratory

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This appendix summarizes the methodologies and procedures for implementing, maintaining, and evaluating the effectiveness of institutional controls at the Idaho National Laboratory (INL).

Maintenance of Information on Institutional Controls

The electronic version of the *Idaho National Engineering and Environmental Laboratory Comprehensive Facility and Land Use Plan* (hereinafter referred to as the Idaho National Laboratory [INL] Comprehensive Facility and Land Use Plan [CFLUP]) (DOE-ID 1997) contains a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) module, which serves as the Site institutional controls database (hereinafter referred to as the institutional controls database). This database provides a listing of facility and land-use restrictions at the INL and provides a tracking mechanism for land uses and institutionally controlled sites.

The institutional controls database serves as a comprehensive listing of all areas or locations on the INL Site that have institutional controls for protection of human health or the environment. The information includes, as a minimum, the location of the area, the objectives of the restriction or control, the timeframe for which the restrictions apply, and the tools and procedures that will be applied to implement the restrictions or controls. The institutional controls database also shall include by reference any permitting changes, renovation work on structures, well placement and drilling, construction, or other activities that occur on INL CERCLA sites with institutional controls. The institutional controls database will be used to document changes to land use and land-use controls. The database for institutionally controlled areas will be reviewed and updated as necessary to reflect changes in land uses and institutional controls that deal with land use. The institutional controls database is available at <http://cflup.inel.gov>.

Maps are available for Site workers to locate the institutionally controlled areas, and the access and work control procedures will refer to these maps. The maps and coordinates for institutionally controlled areas are found at <http://mceris/wag/>.

Notice to Affected Stakeholders

New projects or major land-use changes at the INL Site will be coordinated with affected neighboring federal land management agencies, state resource management agencies, tribal agencies, private landowners, and the public.

Affected stakeholders must be notified before CERCLA sites with remaining contaminants have any changes in land-use designation or restriction. Agency-approved methods for public dissemination of information, such as fact sheets, are used to notify the public of any change in land-use designation, land-use restriction, land users, or activities. The specific stakeholders include, but are not limited to, the following:

- U.S. Department of the Interior Bureau of Land Management
- Shoshone-Bannock Tribal Council
- U.S. Fish and Wildlife Service

- Local county governments
- State of Idaho
- U.S. Environmental Protection Agency (EPA).

Access Control

Unauthorized access to the INL Site is controlled under the authority given in “Trespassing on Department of Energy Property” (10 CFR 860). U.S. Department of Energy (DOE) identification badges are required at the INL. Any member of the general public who visits the INL Site or individual facility must pass through visitor control and be escorted by authorized personnel. Some locations at the INL Site may be accessed without crossing a guard station and presenting identification badges; however, all access points to the INL Site are marked with “No Trespassing” warning signs.

Sites that pose a radiological exposure risk to personnel or visitors are physically and administratively controlled so only trained radiation workers can access the sites. Worker exposure also is maintained as low as reasonably achievable. In addition, sites that potentially pose a hazardous material exposure risk to personnel or visitors are administratively controlled to ensure that only trained workers can access the sites.

In some cases, perimeter fencing, such as chain link fencing, may surround a CERCLA site. Fencing or barriers may be used to control access to certain sites; however, because of the remote location of INL CERCLA sites, fencing is rarely used as an institutional control.

Visible Access Restrictions

Visible access restrictions are those institutional controls that restrict personnel access at a specific CERCLA site. Visible access restrictions may include barriers, permanent markers, or warning signs. Warning signs are the predominant method of access restriction at the INL Site. They identify the location of CERCLA sites to any persons who may intentionally or inadvertently enter or disturb a site. Warning signs will be posted at sites when residual contamination at the site may pose a current or future risk to human health or the environment if excavated or otherwise disturbed.

Warning signs will provide, at a minimum, information on the principle hazard(s) at the site, the media of concern, a point of contact with phone number, and a warning to not disturb the area unless authorized. The point of contact for the INL is the Warning Communications Center. The potential hazard(s) information will be generalized (e.g., organics, inorganics, radionuclides, polychlorinated biphenyls, asbestos, or ordnance) without identifying specific chemicals or radionuclides. The CERCLA warning signs are orange in color, and the format of the signs is consistent throughout the INL Site.

Placement and frequency of warning signs will be sufficient to prevent inadvertent access to a site. The following guidelines address the placement of signs:

- Signs will be clearly posted
- Signs will be visible from any normal avenue of approach
- Signs will be placed at normal approach points

- Signs may be placed intermittently along the boundary of a site
- The effect on visibility from opening doors or other changes in configuration will be considered when posting warning signs
- At least one sign may be placed on each side of an area's boundary
- Warning signs will be securely affixed and located so that signs and labels can be expected to remain in place.

Signs will be placed such that they best advise personnel of the presence of a hazard. In some cases, signs will be placed near but not on the site. Signs may include a map showing the configuration of the CERCLA site and adjacent buildings and structures. Signs and labels will be built to endure expected environmental conditions. Existing signs are inspected on a regular schedule and are replaced as needed.

When needed to control or restrict access to a CERCLA site or designate the limits of a CERCLA site, boundary identifiers will be used. Boundary identifiers to restrict access may consist of fences, ropes, chains, and color-coded adhesive tape. Boundary identifiers to provide permanent location reference points will include permanent surveyed corner markers or other material sufficient to delineate the boundary of an area. Fencing is not generally considered an institutional control; however, fences that are a component of a remedial activity at a site will be managed as part of an operations and maintenance plan for that site.

Control of Activities

Control of activities includes administrative controls relating to a CERCLA site. These controls apply to employees, contractors, lessees, and visitors who access a controlled CERCLA site. The administrative controls cover all reasonably anticipated future activities including, but not limited to, any soil disturbance, routine and nonroutine utility work, well placement and drilling, recreational activities, groundwater extraction, paving, training activities, construction and renovation work on structures, or other activities that might occur at a CERCLA site.

U.S. Department of Energy Directives

DOE directives include policies, orders, notices, manuals, and guides that direct, guide, inform, and instruct employees in the performance of their jobs. DOE directives are legally binding on DOE Idaho Operations Office and on all of its contractors by inclusion into their contract. New orders or changes must be added to the contract. Future directives and guidance concerning restricting groundwater use and access are being considered for the INL Site as part of the evaluation of controls to protect human health and the environment. These may include additional well-drilling restrictions or easements for monitoring, restrictive covenants, or land withdrawal documentation that would be deemed necessary to further protect the public and the environment if land use or ownership changes.

Work Control Process

All work at the INL Site is controlled through the "Integrated Work Control Process" (STD-101). The integrated work control process is the method by which the Integrated Safety Management System, enhanced work planning, and Voluntary Protection Program are implemented. The work control process identifies specific regulatory requirements for work activities, environmental management requirements, radiological control requirements, safety and industrial hygiene requirements, and training requirements

associated with a specific location. Institutional controls are part of the regulatory and environmental management requirements.

Institutional controlled CERCLA sites with potential radiological exposures require written authorizations for entry and work in radiological areas (10 CFR 835.501[d]).

Notification-of-Soil-Disturbance Process

Soil disturbances at the Idaho Nuclear Technology and Engineering Center (INTEC) are controlled through an additional notification of soil disturbance. This notification-of-soil-disturbance process applies only to INTEC and is not used at any other location on the INL. Any soil disturbances at INTEC must be within the requirements established under the *Final Record of Decision, Idaho Nuclear Technology and Engineering Center, Operable Unit 3-13* (DOE-ID 1999) to confirm that a disturbance will not interfere with remedial actions identified in the record of decision (ROD). The established soil disturbance procedure is required for planned disturbance, excavation, and management of soil within Waste Area Group 3. The procedure applies to all actions that may cause a soil disturbance at a CERCLA site at INTEC within Operable Unit 3-13. The overall procedure for initiating a soil disturbance is as follows:

- Review the INTEC controlled drawing of controlled areas to determine which CERCLA site will be affected by the activity
- Prepare an abbreviated activity summary that includes, at least:
 - Description and location of the activity
 - Soil quantities and maximum depths
 - Soil sampling requirements
 - Fate of soil
- Prepare a proposed schedule for the activity.

DOE Idaho is responsible for reviewing the proposed activity and subsequently completing a notification-of-soil-disturbance package. Before any site disturbance activities, the agencies will confirm that remedies identified in the ROD remain operational, functional, and unimpeded.

Assessments of Institutional Controls Database Information

The annual institutional controls assessment will evaluate if the controls or restrictions listed in the institutional controls database are effective and sufficient for each site.

The content of the institutional controls database also will be reviewed during institutional control assessments to determine whether the site and requirements are current and updated as necessary.

Assessment of Visible Access Restrictions

Visible access restrictions, which will be assessed annually, may include barriers, permanent markers, and warning signs. The warning signs will be assessed to verify legibility and accuracy of sign content. Each CERCLA site will be viewed from all normal avenues of approach to determine whether the appropriate warning signs have been placed. The assessment will be documented on assessment checklists.

Assessment of Control Activities

Control of activities includes administrative controls that relate to a CERCLA site. These controls include the institutional controls database, public notices, and control of unauthorized access. The institutional controls database will be reviewed to determine whether required controls are included as part of the documentation.

In general, if a soil CERCLA site contains radiological hazards, then site access is controlled as required by “Occupational Radiation Protection” (10 CFR 835). Areas must be designated and posted according to the requirements of “Occupational Radiation Protection.” Additionally, individuals entering these areas must meet certain training requirements detailed in “Occupational Radiation Protection.”

Reporting

The institutional control assessment results will be documented in annual institutional control assessment reports. The reports will summarize the assessment activities and report deficiencies. The deficiencies will be identified along with corrective actions, forecast completion dates for each corrective action, and a status of each corrective action if the specific action cannot be completed during the calendar year of the assessment. Site photographs and assessment checklists will be maintained in the project file and not routinely included in the reports unless these items are needed to clarify specific text in the reports. The project file will be made available at the INL Site for review by the agencies as necessary to allow the agencies to verify the assessment process.

Response to Failed Controls and Corrective Action

Although failed controls are most likely to be found during the annual assessments, they may be discovered at any time. Subcontractors identifying a failed control will notify DOE Idaho. DOE Idaho will notify EPA and Idaho Department of Environmental Quality (DEQ) within 2 business days after discovery of any major activity inconsistent with the specific institutional controls for a site (e.g., unauthorized well drilling or intrusion into engineered covers) or of any change in the land use or land-use designation of a site addressed in the ROD and listed in the CFLUP (DOE-ID 1997) (e.g., change in land use from industrial to residential). Minor inconsistencies (e.g., signs down or missing) will be resolved as necessary. If minor inconsistencies are identified during the annual assessment, the issue and resolution will be documented in the reports.

If DOE Idaho believes that an emergency exists, DOE Idaho can respond to the emergency immediately before notifying EPA and DEQ and does not need to wait for any EPA or DEQ input to determine a plan of action. DOE Idaho will identify the root cause of the institutional control process failure, evaluate how to correct the process to avoid future problems, and implement these changes after consulting with EPA and DEQ. Table A-1 provides responses to failed control procedures that will be used during DOE Idaho control of the INL Site.

Table A-1. Land-use controls and response to failed controls.

Controls	Control Procedures	Surveillance to Ensure Controls in Place	Frequency of Surveillance	Response to Failed Controls
Control of activities	Statement in CFLUP indicating control of activities	Check continued process applicability	Annually until the Agencies agree to modify frequency.	Correct procedural statement.
	WAG IC sites included in the INEEL CFLUP	Check INEEL CFLUP for inclusion	Annually or as activities occur until the Agencies agree to modify frequency.	Correct deficiency in INEEL CFLUP.
	Procedures that formally review any new activity prior to proceeding	Check continued process applicability	Annually or as activities occur until the Agencies agree to modify frequency.	Correct process or procedure.
	Procedures for soil disturbance	Check continued process applicability	Annually or as activities occur until the Agencies agree to modify frequency.	Correct process or procedure.
	NEPA documentation (e.g., environmental checklists required for drilling wells into/through contaminated perched sites and/or aquifers)	Check continued process applicability	Annually or as activities occur until the Agencies agree to modify frequency.	Correct process or procedure; if unauthorized drilling is conducted, notify EPA and IDEQ. Correct deficiency.
Access restrictions	Included as part of RD/RA Posted warning signs indicating concerns at the CERCLA site	Assessment to ensure signage is in place at appropriate locations	Annually or as activities occur until the Agencies agree to modify frequency.	Correct signage.
Prohibition of unauthorized entry with signs, rope, or fences as specified, and guard gates to INEEL	10 CFR 860 (implemented through DOE orders and DOE's management and operating and security manuals)	Check continued process applicability	Annually or as activities occur until the Agencies agree to modify frequency.	Use procedures for conducting investigations of security incidents in 10 CFR 860 (implemented through DOE orders and DOE's management and operating and security manuals); if unauthorized access occurs, notify EPA and the IDEQ.
Property lease requirements	Procedural statement indicating requirements for property leasing Statement in CFLUP indicating lease requirements	Check continued process applicability and inclusion of sites within the CFLUP	Annually or as activities occur until the Agencies agree to modify frequency.	Correct process or procedures and/or deficiency in the CFLUP and notify EPA and IDEQ.
Property transfer requirements	Procedural statement indicating requirements of property transfer Statement in CFLUP indicating transfer requirement	Check continued process applicability and inclusion of sites within the CFLUP	Annually or as activities occur until the Agencies agree to modify frequency.	Correct process or procedures and/or deficiency in the CFLUP. Notify EPA and the IDEQ.
Control of Records	FFA/CO	Check CFLUP for CERCLA sites and Electronic Document Management System for annual reports	Annually	Correct system to provide records

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Five-Year Reviews

Section 121(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, requires a review every 5 years of sites that, after remedial actions, have remaining hazardous substances, pollutants, or contaminants. The “National Oil and Hazardous Substances Pollution Contingency Plan”(40 CFR 300.430[f][4][ii]) further requires that sites, which after remedial actions, have remaining hazardous substances, pollutants, or contaminants above levels that allow for unlimited use and unrestricted exposure, be reviewed every 5 years to ensure protection of human health and the environment. The 5-year review requirement applies to all remedial actions selected under CERCLA§121.

In November 2002, the EPA, DEQ, and DOE approved and issued the *Record of Decision for Experimental Breeder Reactor-1/Boiling Water Reactor Experiment Area and Miscellaneous Sites, Operable Units 6-05 and 10-04* (DOE-ID 2002). This ROD requires a Sitewide approach to conducting 5-year reviews. DOE Idaho recently prepared the *Idaho National Engineering and Environmental Laboratory Sitewide Five-Year Review Plan for CERCLA Response Actions* (DOE-ID 2004) to address this requirement. The first Sitewide 5-year review is planned to take place in 2005. Performing the 5-year review on an INL-wide basis will provide the following advantages over separate reviews:

- Reduce repetitive documentation and paperwork
- Facilitate the integration of the reviews with other long-term stewardship requirements
- Be cost-effective for the taxpayer
- Reduce the possibility of overlooking issues that may be missed in segregated reviews
- Improve consistency across multiple waste area groups
- Improve communication with stakeholders by providing a single report
- Make it easier for the public to keep abreast of progress at the INL.

Changing and Terminating Institutional Controls

Institutional controls are required as long as land-use or access restrictions are necessary to maintain protection of human health and the environment. The continued use of institutional controls for each CERCLA site will be evaluated during the annual institutional control assessments and the CERCLA 5-year review process. RODs specify that institutional controls will be deleted or terminated during the 5-year review when the parties to the *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory* (hereinafter referred to as the Federal Facility Agreement/Consent Order [FFA/CO]) (DOE-ID 1991) agree in the deletion or termination. Changes or terminations agreed to by the agencies will be documented in an appropriate decision document, such as a remedial action report, ROD, or action memorandum. The change also will be noted in the Site institutional controls database.

Responsibilities

Department of Energy

DOE Idaho is responsible for implementing institutional controls at the INL Site. EPA and DEQ approve the institutional control requirements in the context of remedy selection in a CERCLA remedial action decision document. While DOE Idaho has responsibility for the maintenance of institutional controls, the actual actions that provide for implementation and maintenance are performed under contracts issued by DOE Idaho. Contractors and employees are required to comply with applicable environmental laws, DOE orders, and administrative orders through contract requirements with DOE Idaho.

DOE Idaho is responsible for oversight, integration of, and compliance with institutional controls. DOE Idaho executes work through the use of contractors. In accordance with DOE requirements, each contractor uses a corrective action management system to identify, track, evaluate, document, and report any necessary corrective actions. The corrective action management systems provide a systematic process to ensure corrective actions are taken for noted deficiencies.

DOE Idaho assumes the lead agency role for CERCLA activities at the INL Site, with consultation from EPA and DEQ under the terms and conditions set forth in the FFA/CO (DOE-ID 1991). DOE Idaho is responsible for the following:

- Ensuring the institutional control activities are performed in accordance with the approved institutional control plan
- Ensuring relevant DOE orders, directives, and policies are enforced
- Ensuring National Environmental Policy Act requirements are followed
- Ensuring general and facility-specific work controls are adhered to
- Ensuring site access controls are maintained
- Notifying EPA and DEQ of failed institutional controls
- Initiating contact with the INL community relations department regarding land-use changes and notifications of groundwater management restrictions (e.g., drilling)
- Implementing assessments using personnel trained to the requirements of the approved institutional control plan
- Implementing corrective actions to address failure of institutional controls and providing updated institutional control and CERCLA site information to the institutional controls database coordinator, as required
- Developing the annual institutional control assessment reports and CERCLA 5-year remedy review reports
- Ensuring document control of the institutional control plan (includes revisions), annual institutional control monitoring reports, and CERCLA 5-year remedy review reports, including their placement in the project file and in the information repository
- Submitting institutional control assessment reports to EPA and DEQ

- Reviewing and submitting, if appropriate, notification-of-soil-disturbance packages
- Posting signs and boundary identifiers at CERCLA sites requiring institutional controls.

Regulatory Agencies

EPA and DEQ are the primary regulatory agencies that oversee INL Site cleanup activities in accordance with CERCLA § 120 and the FFA/CO. The regulatory agencies, in accordance with CERCLA and the “National Oil and Hazardous Substances Pollution Contingency Plan” (40 CFR 300.430[f][4][ii]), can review DOE Idaho annual assessments of institutional controls and the CERCLA-required 5-year reviews, can make recommendations, and can propose additional work or modifications to primary documents in accordance with Paragraphs 8.21–8.24, 15.1–15.4, and 22.1 of the FFA/CO.

REFERENCES

- 10 CFR 835, 2002, “Occupational Radiation Protection,” *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 10 CFR 860, 2002, “Trespassing on Department of Energy Property,” *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 300, 2004, “National Oil and Hazardous Substances Pollution Contingency Plan,” *Code of Federal Regulations*, Office of the Federal Register, June 2004.
- 40 CFR 1500–1508, 2002, “National Environment Policy Act (NEPA),” *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory*, Administrative Record No. 1088-06-29-120, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region 10; Idaho Department of Health and Welfare, December 1991.
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- DOE-ID, 2004, *Idaho National Engineering and Environmental Laboratory Sitewide Five-Year Review Plan for CERCLA Response Actions*, DOE/NE-ID-11125, Rev. 1, U.S. Department of Energy Idaho Operations Office, June 2004.
- STD-101, 2003, “Integrated Work Control Process,” Rev. 15, Idaho National Laboratory, July 2003.